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robotically depositing a layer of said adhesive on at least one of said attachment member mounting surface and said first glass surface, said layer of adhesive consisting essentially of said rapid set, rapid cure, two component urethane adhesive;

positioning said attachment member and said substrate after said mixing of said components and said depositing of said layer on said mounting surface or said first glass surface such that said adhesive layer is disposed between and contacting said attachment member mounting surface and at least a portion of said first glass surface of said substrate without exposure of said attachment member on said opposing second surface of said substrate;

said adhesive setting during a set up period while said adhesive layer holds said attachment member against movement resulting from the weight of said substrate and/or said attachment member and/or from application of a relatively slight force; and

allowing said adhesive layer to cure, said cured adhesive layer bonding said attachment member to said first glass surface prior to installation of said assembly in the vehicle.

REMARKS

Claims 131-169 remain in the application. Claims 131, 135, 141 and 153 have been amended herein pursuant to the interview conducted with Examiner Niland on September 15, 1999. The title has been amended to correspond with claims 131-169 and the patent number of the parent of this application has been added to the Cross Reference to Related Application on page 1. No new matter has been added. In addition, a Terminal Disclaimer, signed by an officer of the assignee of the present invention, is attached with respect to U.S. Patent No. 5,853,895. Reconsideration and allowance of the application including claims 131-169 is


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respectfully requested in view of the above amendments, the attached Terminal Disclaimer and the following comments.

During the interview, the undersigned counsel for Applicant and assignee's representative, Dr. Niall R. Lynam, Senior Vice President and Chief Technical Officer of the assignee of the present invention, described the invention to the Examiner including the method for producing a vehicular window assembly by bonding a load bearing attachment member to glass using a rapid set, rapid cure, two component urethane adhesive without the load bearing attachment extending through the glass. The amendments, as presented in the proposed amendments forwarded to the Examiner prior to the interview were also discussed including the addition to the claims in which the layer of adhesive was further defined as consisting essentially of said rapid set, rapid cure, two component urethane adhesive. In view of such amendments, and the indication that a Terminal Disclaimer with respect to U.S. Patent No. 5,853,895 would be submitted with the Response, the Examiner stated that claims 131-169, as amended, would be allowed. The courtesy and helpfulness of the Examiner during the interview and the prosecution of this application is sincerely appreciated.

The Rejection Under 35 USC § 112, Second Paragraph

Claims 135 and 141 have been amended to overcome the Examiner's objections thereto under 35 USC § 112, second paragraph. Claim 135 has been changed to accurately define the polyol component in accord with the specification such as at page 20, line 20 to page 21, line 5. Claim 141 has been amended to refer to "said high amine density plural amine compound" which has a proper antecedent basis in claim 132 from which it depends. These amendments are thus made for clarity and proper claim form and are not made to overcome any prior art rejection. In view of these amendments, it is respectfully



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submitted that the rejection of claims 135-137, 141 and 142 as set forth in paragraph 6 of the Office Action should be withdrawn.

The Rejection Based on Nonstatutory Double Patenting

The Examiner rejected initially filed claims 131-169 under the judicially created nonstatutory doctrine of obviousness-type double patenting as being unpatentable over claims 36-50 of U.S. Patent No. 5,853,895. In response, a Terminal Disclaimer to obviate the double patenting rejection is submitted herewith under 37 CFR 1.321 and has been signed by Dr. Niall R. Lynam, Senior Vice President and Chief Technical Officer of the assignee of the application. In view of the submission of this Terminal Disclaimer, it is respectfully submitted that the non-statutory, double patenting rejection is now obviated and should be withdrawn.

The Rejection Under 35 USC § 103(a)

In addition, initially filed claims 131-169 were rejected under 35 USC § 103(a) as being unpatentable over a series of references as set forth in paragraph 5 of the Office Action. These claims define a method of forming a bonded vehicular assembly by adhering a load bearing attachment member to a glass surface. That method has now been verified by defining that the layer of adhesive consists essentially of the rapid set, rapid cure, two component urethane adhesive formed by mixing an isocyanate component and a polyol component such that, after a layer of such adhesive is deposited on at least one of the attachment member mounting surface or the first glass surface, and the attachment member is positioned on the substrate such that the adhesive layer is disposed between and contacting the attachment member mounting surface and at least a portion of the first glass surface of the substrate without exposure of the attachment member on the opposing second surface of the

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substrate, the adhesive sets up during a set up period while the adhesive layer holds the attachment member against movement resulting from the weight of the substrate and/or attachment member and/or from application of a relatively slight force. Thereafter, the adhesive layer is allowed to cure with the cured adhesive layer bonding the attachment member to the first glass surface prior to installation of the assembly in a vehicle.

As also discussed in the interview, and as agreed by the Examiner, the above amendments clarify Applicant's invention and distinguish this invention from the disclosure of Repp et al. 5,551,197 taken alone or in combination with any of the secondary references Mülhaupt et al. 4,963,636, SAE Technical Paper 910758 by Csokasy et al., Bravet et al. 5,529,655, Bamford et al. 3,282,014, Jackson 5,072,984, Kronbetter 5,294,168, Friese et al. 4,793,099, Schmucker 5,508,111, Sartelet et al. 5,338,767, Morgan et al. 4,364,214, Goel 4,743,672, BETAMATE® Technical Bulletin 73100/73003, BETAMATE® Structural Adhesives Data Table, and Schürmann 4,995,666. The references of record fail to disclose, teach or suggest Applicant's claimed invention. Further, the references fail to teach or suggest Applicant's claimed method including providing an attachment member and a substrate having opposing first and second glass surfaces and depositing a layer of the adhesive which, after cure, bonds the attachment member to the substrate without exposure of the load-bearing attachment member on the opposite, second surface of the substrate. Indeed, many of the references cited by the Examiner refer to single component urethanes which, as discussed in the present specification, such as the Background of the Invention at pages 1-4 and the experimental testing results on pages 31-43, including the accompanying tables and figures, show that the single component urethanes do not obtain the objectives of the present invention. The rate of set and cure of prior known adhesives, such as single component

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urethanes, is significantly slower than the rapid set, rapid cure adhesive used in the present invention. As such, those references teach away from the present invention.

While Repp et al. '197 teaches several adhesives, it does not disclose, teach or suggest use of the specific type of adhesive defined in Applicant's present claims, namely, a layer of adhesive consisting essentially of a rapid set, rapid cure, two-component urethane adhesive, or a rapid set, rapid cure two component adhesive comprising an isocyanate component and a polyol component, such as that described in Applicant's specification at pages 17-26, for example. Indeed, Repp et al. '197 discloses in columns 7 and 8 that a preferred form of the adhesive for bonding the hinge to the glass panel in Repp et al. is through the use of two separate adhesives, namely, a temporary fixturing adhesive, such as a hot-melt thermoplastic which temporarily locates or fixtures the hinge against the window panel, and a second adhesive which slowly cures and forms the permanent, primary bond. Column 8, lines 39-43, state that the preferred adhesive for the permanent, primary bond comes in a single package so that no mixing of reactants need occur prior to application, and provides a much more efficient method than previously known adhesives requiring mixing of reactants. Specifically, a moisture-activated, single component, adhesive urethane, such as Morton Yokohama WS70-FK is listed as the permanent adhesive. However, using a temporary and a permanent adhesive is distinguished by Applicant's amended claims which define the depositing of an adhesive layer consisting essentially of a layer of rapid set, rapid cure, two-component urethane adhesive after formation of the adhesive by mixing an isocyanate component and a polyol component, positioning the attachment member and substrate after mixing and depositing the adhesive layer such that the adhesive layer is between the substrate and attachment member mounting surface, without exposure of the

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attachment member on the opposing second substrate surface, with the adhesive holding the attachment member against movement resulting from the weight of the substrate and/or attachment member and/or from application of a relatively slight force during a set up period, and allowing the adhesive to cure. The rapid set, rapid cure, two-component adhesive defined by Applicant in the amended claims would not be expected to result from the use of two distinct adhesives, namely, a temporary and permanent adhesive as set forth in Repp et al. '197. The temporary fixturing adhesive is included in Repp et al. specifically to hold the hinge or other member while the other adhesive permanently sets up over a lengthy period of time. The attachment of the attachment member to the substrate in Applicant's present amended claims using an adhesive formed from two components which provides both rapid set and rapid cure is simply not contemplated by any of the disclosure of Repp et al. '197.

Likewise, the secondary references fail to add any disclosure missing from Repp et al. to arrive at Applicant's method as set forth in the amended claims. The mere fact that the secondary references disclose one or two-component adhesives generally, while Repp et al. '197 discloses the use of two separate adhesives for temporarily and permanently attaching a member to glass, does not suggest that these references should be combined. Further, even if combined, the references would fail to disclose Applicant's combination of method steps as set forth in the amended claims.

Specifically, Sartelet et al. 5,238,767 describes the fitting of a glass in a window profile, not the attachment of an attachment member to a substrate without exposure of the attachment member on the opposing second surface of a window assembly as in Applicant's amended claims. Indeed, the adhesive in Sartelet et al. is directed to a specific thixotropic effect to prevent running and dripping even on vertical surfaces.

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Csokasy et al. SAE Paper No. 910758 discloses encapsulation concepts for RIM urethane on one side of an automobile window, not the use of a rapid set, rapid cure, two component urethane adhesive for attachment members as in the present invention.

Mülhaupt et al. '636 and Goel '672 relate to adhering one element to another with no specific method steps being noted, especially as set forth in Applicant's amended claims.

Bravet et al. '655 discloses adhering glass into a vehicle, not the combination of substrate and attachment member bonded by an adhesive as set forth in Applicant's amended claims.

Schmucker 5,508,111 is directed a polyurethane adhesive which exhibits good sag and thixotropic properties especially adapted for bonding an inner structural panel to an thin outer appearance panel. Again, Applicant's claimed method combinations are not disclosed or suggested.

Schürmann '666 relates to adhering parts to panels and does not include any disclosure of the use of specific two-component, rapid set, rapid cure adhesives, as set forth in Applicant's amended claims.

Friese et al. '099 merely discloses a specific type of sliding window, not the combinations of Applicant's amended method claims using the specific adhesive layer now set forth.

Kronbetter '168 merely discloses a specific structure of a sliding window, not the combination of method steps defined by Applicant's invention.

Jackson '984, in fact, teaches away from Applicant's invention since it discloses holes drilled through windows to receive fasteners, such as that at 25, which are

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exposed on both sides of the window pane. Applicant's claims specifically exclude such structures. The purpose of the present invention is to avoid the drilling of such holes and the use of such exposed fasteners.

Similarly, the remaining references of record including Bamford et al. '014, Morgan et al. '214, the BETAMATE® references, and Ryan et al. '867, all fail to disclose or suggest the methods set forth in Applicant's amended claims.

Should the Examiner have any questions or wish to further discuss this Response, he is respectfully requested to telephone the undersigned counsel for Applicant at the address and number listed below.

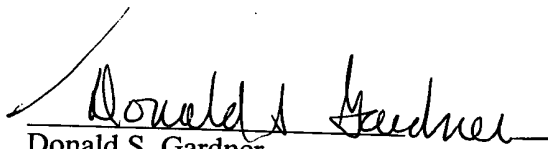
Accordingly, as discussed with the Examiner during the interview, it is respectfully submitted that claims 131-169, as amended, are allowable and a Notice of Allowance is earnestly and respectfully requested.

Respectfully submitted,

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By: Van Dyke, Gardner, Linn & Burkhart, LLP

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